

ABSTRACT OF THE DISCLOSURE

An optical encoder comprises a light source unit,
a scale which has a periodic optical pattern and
displaces relatively to the light source unit, and
5 a light detector to detect a light beam emitted from
a light source of the light source unit and traveled by
way of the scale. The light source unit has a light
beam exit opening through which a light beam is emitted
toward the scale. Assuming that z_1 is a distance
10 between the light beam exit opening and the scale, z_2
is a distance between the scale and the light detector,
and p_1 is a pitch of the periodic optical pattern of
the scale, the width W of the light beam exit opening
in the scale moving direction is determined depending
15 on the values of z_1 , z_2 , and p_1 .